

# 3rd International Acquisition/Procurement Seminar

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## Cost Effective Acquisition

## The Singapore Maritime Patrol Aircraft

Lee Kian Kong



**The Sea Lines of Communication traversing the South China Sea in the east and the Malacca Strait in the west form the shortest routes between the Pacific and Indian Oceans.**

**Hundreds of ships use these Sea Lines of Communication daily. This is because, despite the easy availability of air transport, the sea is still the medium of transportation for the largest portion of trade and commerce.**

**The dynamism of the Asia Pacific region depends largely on trade in raw materials and finished products, transported over the oceans. For Singapore, we are highly dependent on trade as this amounts to more than three times our GDP.**

**The importance of the sea to Singapore has not changed despite our transition from a labour intensive entreport economy to a skill intensive high value-added one. The Sea Lines of Communication remain the arteries which sustain our survival and posterity and we need to ensure that ships can pass through these waters unhindered and unobstructed.**

Dr Tony Tan  
Deputy Prime Minister and  
Minister for Defence  
Republic of Singapore

13 Sep 95

KILOMETRES

0 100 200 300 400 500  
STATUTE MILES

1883 Krakatoa

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# ***TASK***

***To provide a***  
**COST EFFECTIVE**  
**SOLUTION**

***for the need of a Maritime***  
***Patrol Aircraft***

# **Cost Effective Acquisition**

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- ***Buying Only What Is Needed***
- ***Competing To Draw Out The Best Deal***
- ***Controlling The Risks***

# ***Beginning of Maritime Air Surveillance.....***

# **1989**



# Shorts SH-7 Skyvan

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# Shorts SH-7 Skyvan (with radar)

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# Platform Selection



# Thorough Front End Study

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- ***Ops Analysis to determine Needs***
- ***Definition of Requirement***
- ***Market Survey***
- ***Cost of the Programme***

# Thorough Front End Study

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# Full-Fledged MPAs

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**Lockheed  
P3C**



**Dassault  
Atlantique 2**





# Modified Military Transport

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**C130**





# Remanufacture From Used Airframes

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**Grumman S2  
Tracker**



# Conversion of Civil Passenger A/C

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**Fokker F50**



**British Aerospace  
Advanced Turbo  
Prop**

**Boeing Dash 8**



**Buying Only What Is  
Needed**

***Getting the Cardinal  
Requirements Right***





***Competing to draw out  
the Best Deal***

**Based on Cost  
Effectiveness**



***Our Choice ...***



***The Fokker 50***

# Our Mindset ...

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***We were prepared to  
accept CIVIL aircraft***

# Challenges

- **Civil vs Military Standards**
- **Aircraft Modifications**
- **System Integration**

# Benefits

- **Lower Cost**
- **Influence System Design and Customise to our Needs**
- **Best mix of system sensors**
- **Develop Local Capability**



# Controlling the Risks

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## ***Risk Control Measures***

- ***Front-end technical feasibility study***
- ***Sharing of developmental risks with manufacturer***
- ***Develop in phases***

# ***Front End Study***

# Ensuring EMC and System Interoperability

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# Feasibility of Structural Modifications

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# Maximum Take Off Weight

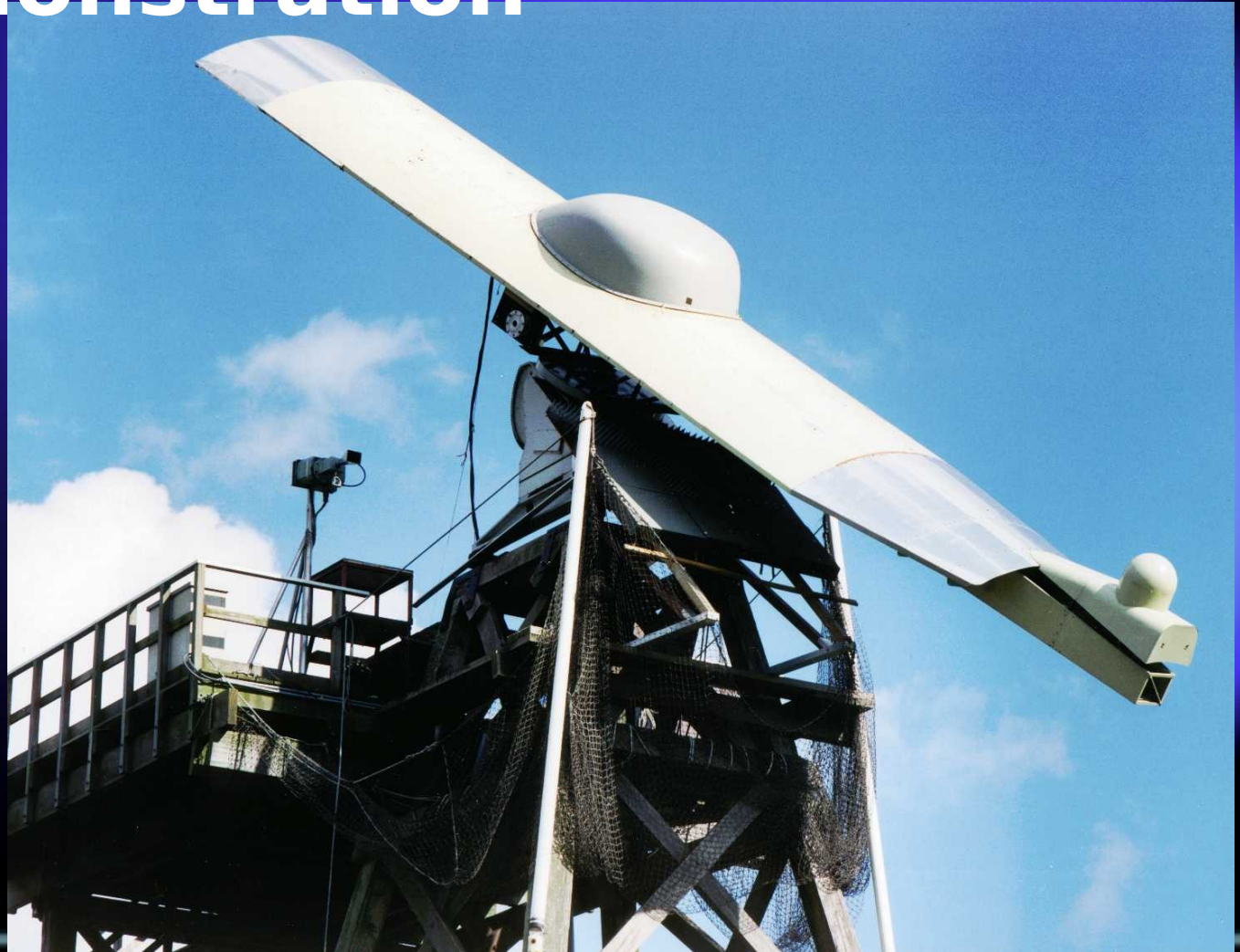




# ***Risk Management***

# IRDS Feasibility Demonstration

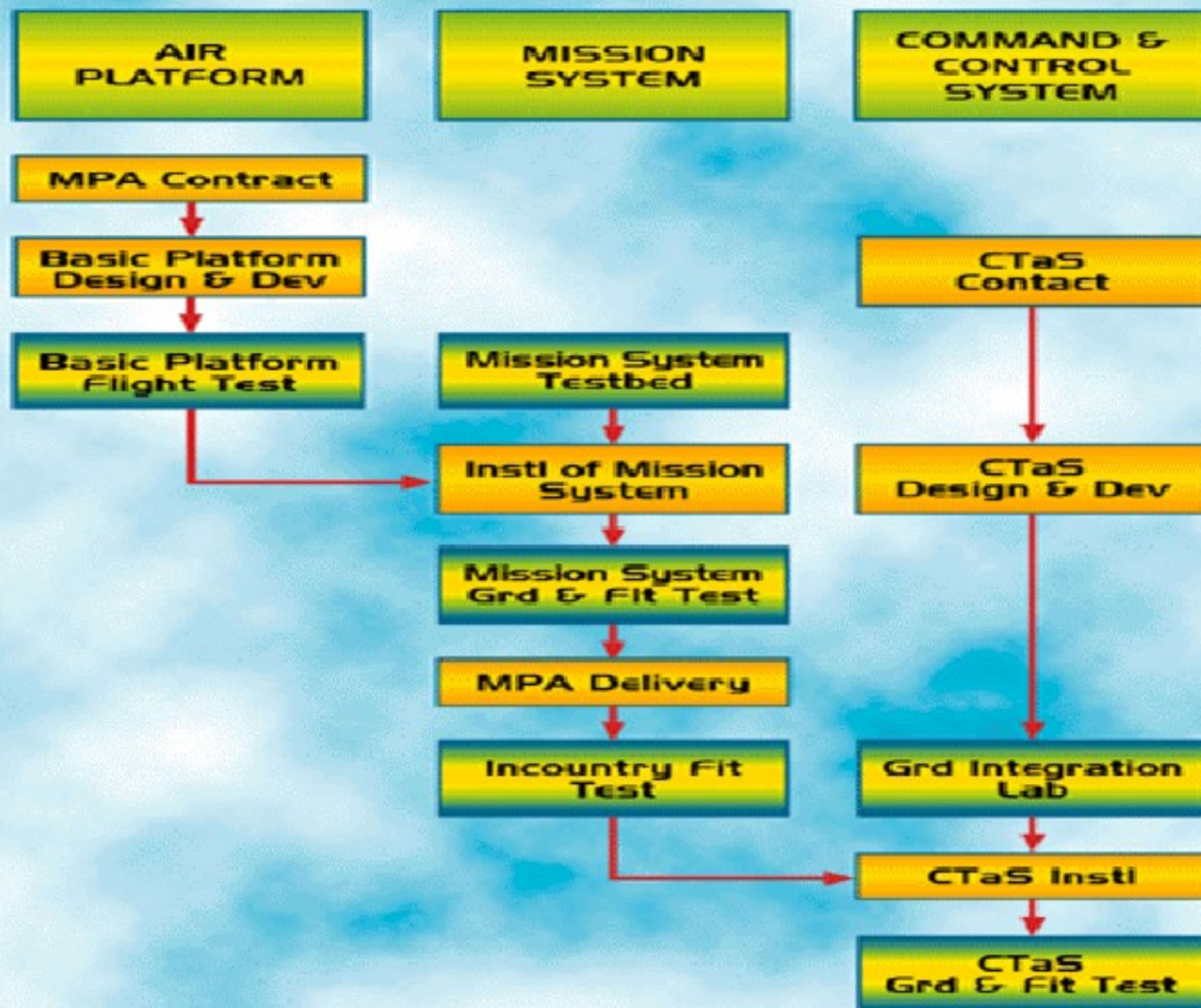
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# ***Phased Development***



# DEVELOPMENT PROCESS



# Modification in Fokker F50

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**Flying  
Qualities**

# Command and Control System

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# Multinational Collaboration

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# Fokker 50 MPA

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# Thank You